International Geology Review 1963 vol.5 N1, pages 63-70

Geophysical features of oil-bearing structures in the volga-ural province

Andreyev B., Boronin V., Krylov S.
Kazan Federal University, 420008, Kremlevskaya 18, Kazan, Russia

Abstract

Variation in physical properties along the bedding has been observed in the Volga-Ural province. It is caused mainly by differences in the intensity of tectonic fracturing in Devonian, Carboniferous, and Permian rocks. The most intensive fracturing occurs in the crests and steep wings of anticlines. The result is a lower velocity of the elastic waves, so that depths to the reflecting horizon, computed on the assumption of a constant velocity, do not correspond to those actually determined by drilling. In a number of instances, the effect of decreasing rock density is stronger than that of relief, because of the great thickness of the carbonate section (over a kilometer). The average velocity of elastic waves, in interval from the top of the carbonate section to the reflecting horizon varies also depending on the magnitude and sign of curvature of the carbonate section surface. Methods of arriving at the true velocity are described, with appropriate formulas.--Auth. English summ.

http://dx.doi.org/10.1080/00206816309474679